

Remarks

I. Status

The Specification has been amended to remove hyperlink citations (MPEP § 608.01). No new matter has been added by the amendments.

Claims 1-42 were previously pending. Applicant has cancelled claims 1, 3-4, 10, 12-13, 19, 21-22, 28-35, and 40-42 without prejudice or disclaimer, and has added new claims 43-46. Accordingly, claims 2, 5-9, 11, 14-18, 20, 23-27, 36-39, and 43-46 are presently pending.

New claims 43-46 are intended to replace claims 1, 10, 19 and 34, respectively. The claims recite that the electronic images are stored in a database, and comprises a plurality of *inherently unrelated* image aspects. These image aspects include a "target" image aspect (whose identification, retrieval and display is desired) as well as non-target image aspects (such as individuals other than a target individual who may be present in an image).¹ The claimed invention also now recites that the association of a desired *user-selected* annotation term with a target image aspect comprises "*drop and drag*" positioning of the annotation term at a *user-selected* location *within* the displayed electronic image so that it is able to permit a user to identify the associated target image aspect and distinguish it from non-target image aspect(s) contained within the electronic image.

1. The application clarifies that inherently related image aspects are image aspects in which the relative placements of all desired annotations is determined solely by the scale of the image and the X,Y (or X) coordinate of its center, rather than by inspection and analysis of the image (see, page 4, lines 5-10). Thus, for example, annotations of image aspects of Bill Clinton and Boris Yeltsin are inherently unrelated, while those identifying the location of the White House and the Capitol are inherently related. Support for this recitation can be found in the specification at page 10, lines 9-14.

The newly added claims further include the recitation that the electronic images and a list of annotations are stored in a database that permits a user to query the database and thereby retrieve and display images containing an image aspect associated with a queried annotation term or family of terms. The claims now further recite that the capability of defining annotation terms and of associating such terms with image aspects of the displayed electronic images is available to both the initial user and to subsequent users of the claimed methods and computer systems. Support for this recitation can be found at page 6, lines 5-9 of the Specification. The claims additionally recite that the positioning of desired annotation terms is accomplished by selecting, dropping and dragging desired annotation terms to a user-selected position in the electronic image. Support for such recitation can be found, for example, at page 14, lines 17-26 of the Specification. The recitations of the newly added claims are fully supported by the original specification (see, e.g., Figure 6). Claims 2, 5-6, 11, 14-15, 20, 23-24, and 36-39 have been amended to address antecedent basis and to revise their dependency in light of the cancellation of base claims. No new matter has been added by any of the requested amendments.

II. The Patentability of the Presented Claims over the Teachings of Applicant Admitted Prior Art (AAPA) and Hilton *et al.* and Kuchinsky *et al.*

Previously presented claims 1-6, 10-15, 19-24 and 28-36 have been rejected under 35 U.S.C. § 103(a) as unpatentable in light of "Applicant Admitted Prior Art" ("AAPA") and Hilton *et al.* (U.S. Patent No. 5,452,416). Previously presented claims 7-9, 16-18 and 25-27 have been rejected under 35 U.S.C. § 103(a) as unpatentable in light of "Applicant Admitted Prior Art" ("AAPA") when combined with Hilton *et al.* (U.S. Patent No. 5,452,416) and Kuchinsky *et al.* Applicant respectfully traverses these rejections and submits that the presently amended claims define patentable subject matter over these references. Reconsideration is therefore requested.

A. The Teachings of “Applicant Admitted Prior Art” (“AAPA”)

The Examiner has questioned the patentability of the present invention in light of references and documents cited in “Background of the Invention” section of Applicant’s application. As a preliminary matter, Applicant has not “admitted” that any of the references and documents discussed in the present specification comprise “prior art,” and interpret the Examiner’s terminology as merely a shorthand way of referring to the disclosed background information.

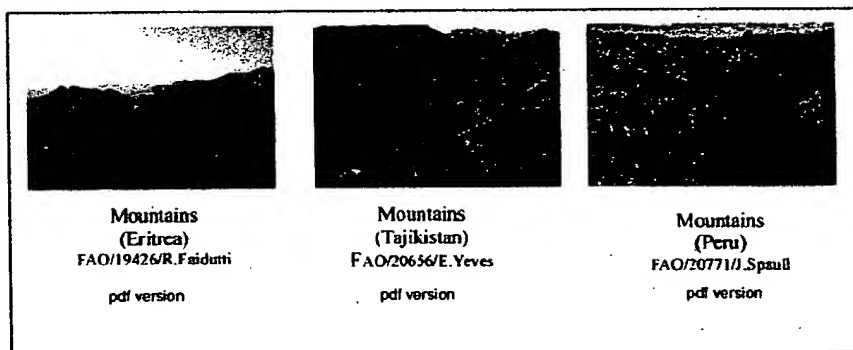
It is respectfully submitted that the references and documents cited in “Background of the Invention” section of Applicant’s application (i.e., “Background Art”) do not detract from the patentability of the invention, and in fact evidence the patentability of Applicant’s invention. It is submitted that such Background Art relates to methods that differ in substantial ways from Applicant’s invention.

For example, early efforts at annotating electronic images consisted of associating a database of “form fill-in” or “free” text boxes with electronic images (see, e.g., Microsoft® Access®, U.S. Patent Nos. 6,111,586; 5,873,080; 5,493,677; 5,404,435; 5,142,662; PCT Publ. No. WO00046695A1; EP Applns. Nos. EP00938227A3 and EP01006464A2, Kodak PhotoEasy®, MGI PhotoSuite®, Aladdin Image AXS®, Kodak’s photonet, and Gatherround.com, shutterfly, all cited on page 2 of the present application). As the Examiner will appreciate, such Background Art differs from Applicant’s invention in multiple ways, including:

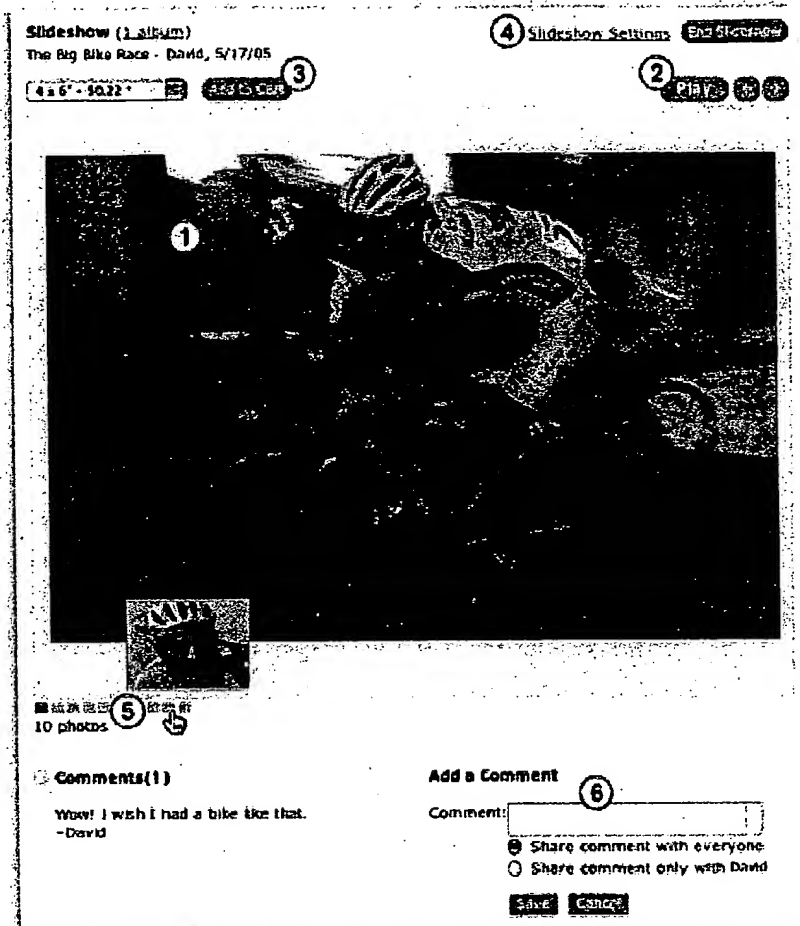
- lacking the capability to employ drop and drag positioning to implement desired annotations;
- lacking the ability to store previously employed annotation terms (i.e., it is submitted that annotation terms used in such Background Art terms must be manually entered);

- lacking an effective ability to search combinations of annotated sub-images (i.e., retrieving electronic images showing President Clinton near Boris Yeltsin);
- lacking an effective ability to annotate sub-aspects of an electronic image, particularly within an electronic image, so as to permit a subsequent user/viewer to discern which sub-aspect had been annotated (i.e., identifying for the subsequent user/viewer which child in a picture of a group of children was Bill Clinton at age 5);

It is submitted that these deficiencies of the above-cited Background Art are more than merely "cosmetic." They relate to the effective *non*-functionality of such Background Art methods as tools for image annotation. As the present application discloses, informational content (i.e., *who* is in a picture?) is invariably lost if annotation cannot be facilely and precisely accomplished (see, e.g., page 1, lines 14-24). The requirement of the above-discussed Background Art to manually type annotations on picture after picture of an image library substantially limits the usefulness and applicability of such methods. Moreover, the capability of the above-discussed Background Art to annotate only in margins or text blocks fails to provide users with the precision of annotation desired to permit subsequent users/viewers to identify desired sub-aspects of an electronic image (i.e., identifying which child in the picture of a group of children is Bill Clinton as a youth?). For example, the annotated images shown below are screenshots that are believed to be producible using the methods of the above-cited Background Art and to illustrate the capabilities of such methods.



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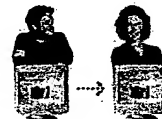
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As the Examiner will appreciate, such annotations do not permit subsequent users to clarify, for example, which mountains are being depicted, or the time of year, or the identities of the depicted individuals. Information not recorded by the original annotator is thus irretrievably lost. Moreover, it is submitted that the terseness of the descriptions in the above illustrations evidences the impact of a requirement to manually type each annotation. The annotations permitted by Shutterfly.com (see description above) are printed and viewed on the *back* of the printed image. The Snapfish.com site advises its customers:

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(please see, http://www.snapfish.com/helpsharing/t_0).

The above-discussed problem of image annotation is exacerbated by the effective inability of the methods disclosed in the Background Art to *retrieve* desired images. As the specification discloses, searches such as for images depicting "agriculture in developing nations" are difficult to satisfy. While search engines (Lycos, Corbis, etc.) do exist, the *quality* of the permitted search greatly limits the utility of such software in retrieving desired annotated images. For example, a search of "agriculture in developing nations" using Lycos produced the following screenshot:

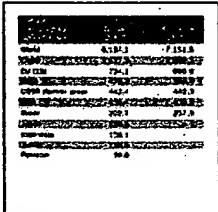
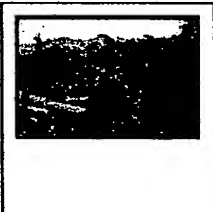


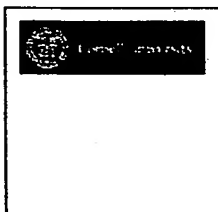
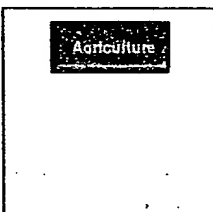
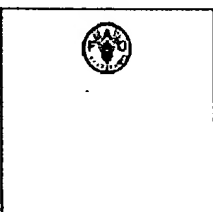
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0204p67_2.jpg 243 x 196: 29 kb www.un.org	deforestation.jpg 200 x 134: 6 kb www.elca.org	Ia402.gif 350 x 178: 6 kb ip.cals.cornell.edu	Logo402.gif 173 x 88: 5 kb ip.cals.cornell.edu
			
culogo_web_60revred... 263 x 76: 3 kb transnationallearning....	agriculturebutton2.... 85 x 35: 3 kb www.resnet.trinity.edu	small_logo.gif 35 x 35: 2 kb www.fao.org	

These images may be subject to copyright laws

As the Examiner will appreciate, such minimally annotated images provide only minimal capacity for accurate retrieval. The permitted annotations are *not* positioned within the retrieved image, and thus fail to assist in the identification of the annotated image aspect. Moreover, the program does not permit subsequent viewers/users to update, edit, or enhance the annotations, all in contrast to methods and systems of the present invention. Thus, Applicant submits that the dynamic ability of the present invention to enhance and particularize image annotations is not found in such Background Art methods.

In light of the clear deficiencies of the textual annotation approaches described above, non-textual or "content-based" approaches to annotation of images have arisen (see, e.g. U.S. Patents Nos. 5,911,139, 5,899,999, and 5,579,471 and PCT Publns. Nos. WO09935596A1 and WO09931605A1), as discussed on page 3 of the present application. However, as supported by Rui, et al. (1999; "Image Retrieval: "Current Techniques Promising Directions and Open Issues," <http://citeseer.nj.nec.com/384715.html>), Chellappa *et al.* (1995; "Human and Machine Recognition of Faces: A Survey" *Proceedings of the IEEE*, Vol. 83, pp. 705-740) and Kuchinsky *et al.* (1999; "FotoFile: A Consumer Multimedia Organization and Retrieval System", *Proceedings of ACM CHI99 Conference on Human Factors in Computing Systems*, 496-503, all previously made of record,) such efforts had failed to develop computer software-assisted methods sufficient to permit the effective non-textual annotation and retrieval of electronic images.

As discussed on page 3 of the present application, much effort has gone into the annotation of images having inherently related image aspects (e.g., maps, tree hierarchies, medical images, etc.). However, since the image aspects of such images have an inherent directional/distance relationship to one another, the relative placements of all desired annotations are determined solely by the scale of the image and the X,Y (or X) coordinate of its center, rather than by inspection and analysis of the image. Thus, such effort is not applicable to the annotation of photographs, video, and other electronic images having image aspects that are inherently unrelated to one another.

The application also discloses that "digital ink" approaches have been pursued to place labels manually, much like a post-it® note, on documents, photographs, maps, diagrams, webpages, medical images, etc. (see, pages 4-5; Whayne *et al.* Patent (discussed below)). However, as noted by Rui, *et al.* (1999; <http://citeseer.nj.nec.com/384715.html>), the perception subjectivity and annotation impreciseness of text-based image retrieval systems may cause unrecoverable mismatches in the later retrieval process. The problem is particularly significant for most owners of personal photograph libraries. Applicant submits that this problem is not addressed in the above-cited Background Art, but is solved by Applicant's use of a *database* of annotation terms (e.g., so that annotations of "Bill Clinton," "William Clinton," "WJ Clinton," etc. can be standardized to "Bill Clinton", thereby enhancing accuracy and standardization of annotations and facilitating the retrieval of desired images). Thus, it is submitted that the inventions ability to provide a list of suggested annotations to users serves both the goal of facilitating more complete annotation of a stored image *and* the goal of increasing the efficiency of desired image retrieval.

In sum, Applicant submits that the individual and aggregate teachings of the Background Art identified in Applicant's specification fails to disclose or suggest an image annotation/retrieval method in which non-inherently related image aspects:

- can be annotated using annotations that are selected from a list or database of suggested annotations; or
- can be annotated by selecting, dropping and dragging a user-selected annotation to a user-selected position within the image being annotated.

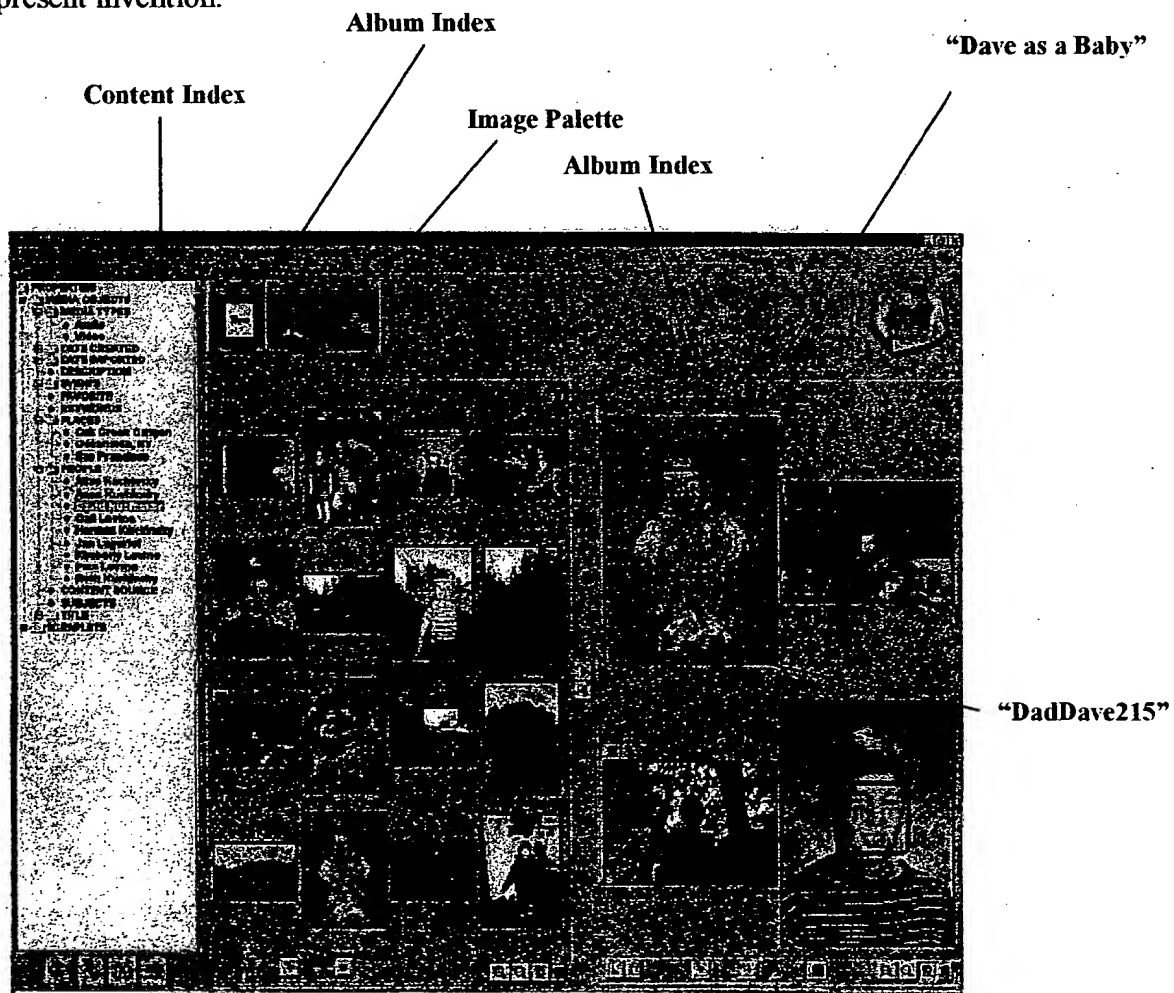
Applicant accordingly submits that the presently claimed invention is patentable over the individual and aggregate teachings of the Background Art.

B. The Teachings of Kuchinsky *et al.*

The Kuchinsky *et al.* reference cited by the Examiner discusses a computer-facilitated photograph annotation system referred to as "the FotoFile system". Applicant

respectfully submits that the method disclosed in Kuchinsky *et al.* differs significantly from Applicant's invention, and does not detract from the patentability of the present claims.

Figure 1 of Kuchinsky *et al.*, which is reproduced below for the convenience of the Examiner, illustrates the teachings of the reference. The disclosed system provides an "Album Index," a "Content Index," an "Image Palette," and an "Album Editor". Several salient differences distinguish the annotation system of Kuchinsky *et al.* from that of the present invention.



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Kuchinsky *et al.* fails to teach or suggest the possibility of permitting users, and in particular *subsequent* users, to freely enhance the annotations provided by the album creator. In this regard, the Examiner will note that Kuchinsky *et al.* teaches that the image annotations are provided as “values” for “metadata” attributes (Kuchinsky *et al.*, page 498). These metadata attributes (e.g., *creation date, location, subject, people, title* and *description*; see Kuchinsky *et al.*, page 498) are set by the album creator, and are listed in the “Content Index.” It is submitted that while Kuchinsky *et al.* teach that subsequent users may provide/edit the “values” associated with metadata attributes. However, the reference does not teach or suggest that disclosed system empowers users with the ability to alter or add to the permitted metadata attributes (e.g., the reference does not teach or suggest that subsequent users are free to add new metadata attributes. Thus, only those features deemed important by the album creator may be searched and only images containing such features may be retrieved. As an example, Figure 1 of Kuchinsky *et al.* shows a photograph “David’s Toys,” but would not allow a subsequent user to search for and retrieve pictures of *tables* or *indoor scenes* because no metadata attribute of *tables* or *indoor scenes* had been provided by the album creator. In contrast, the present invention permits subsequent users to *not only modify existing annotations, but also to add new annotations*, thereby permitting each subsequent user to produce an album having a personalized relevance.

Indeed, the entire framework of the method taught by Kuchinsky *et al.* differs from that of the present invention. While the present invention and the method of Kuchinsky *et al.* both recognize the desirability of annotating individual image aspects, only the present invention permits users to associate user-selected annotations *with individual image aspects*; the method of Kuchinsky *et al.* is limited to associating metadata value annotations *with the entire selected image*.² The resulting annotations thus differ

2. Applicant notes Figures 3 and 4 of Kuchinsky *et al.* which depict the presence of text boxes within an image. However, as clarified on page 500 of the reference, the text boxes (e.g., “Merrick?”) is merely a transient query requesting the user to confirm a face match. Neither the placement of the textbox nor its content is user-selected or user defined.

markedly. For example, while it may be self evident who the individual is in the image entitled "David as a Baby," the method of Kuchinsky *et al.* does not permit a user to discern who was "Dad" and who was "Dave" in the image "DadDave215." The failure of Kuchinsky *et al.* to teach or suggest the annotation of individual image aspects contained within a displayed image substantially affects the functionality of the method, and clearly distinguishes the method of Kuchinsky *et al.* from the present invention. In this regard, the Examiner is asked to consider how Kuchinsky *et al.* would solve the problem of annotating names to a picture of identical quintuplets. Such a problem is readily solved by Applicant's invention.

Kuchinsky *et al.*'s decision to annotate images as entire entities (as opposed to the annotation of separate image aspects) has three further ramifications:

- First, Kuchinsky *et al.*'s approach obviates any purpose in displaying the annotations. In this regard, the Examiner's attention is respectfully drawn to the fact that only the *titles* of the displayed images are displayed in Kuchinsky *et al.* The other metadata labels (e.g., *events*, *places*, *date created*, etc.), *even if used to retrieve the displayed images*, are not displayed (see Kuchinsky *et al.*, Figure 1). Thus, Kuchinsky *et al.* use the metadata values (annotations) merely as search and retrieval tools. In contrast, Applicant's invention is capable of displaying the annotations of the selected images.
- Second, Kuchinsky *et al.*'s approach presumes that a user is concerned about only a single salient feature at a time, and not with combinations of features. Thus, Applicant submit that Kuchinsky *et al.* provide no means for retrieving and displaying only those images of "David" that additionally contain an image of "Dad." In contrast, Applicant's invention is capable of displaying images satisfying multiple search constraints.
- Third, since Kuchinsky *et al.*'s approach does not involve the display of annotations, it need not be concerned with the *placement* of such annotations. Thus,

in addressing the tedium of the manual entry of annotations,³ Kuchinsky *et al.* teach that non-manual text entry is to be accomplished by selecting one or more metadata attribute/value pairs and then annotating selected images by pressing an "Annotate" button (see page 498, right column, second paragraph). In contrast, the present invention provides a "drop and drag" functionality that permits users to not only rapidly select and annotate desired image aspects, but to fine-tune their respective placements. As discussed above, the "drop and drag" functionality enhances the accuracy and standardization of annotation and facilitates image retrieval in addition to reducing the tedium of manual annotations.

In sum, the present invention differs from the methods of Kuchinsky *et al.* by providing users with the ability to add to the classes of annotations provided by the album creator, by permitting the annotation of individual image aspects, by permitting the display of such annotations, by permitting users to retrieve images satisfying multiple search constraints, and by providing an annotation mechanism (drop and drag) that enhances annotation accuracy and standardization. It is accordingly submitted that Kuchinsky *et al.* fails to anticipate the present invention or render it obvious.

C. The Teachings of Hilton *et al.*

Hilton *et al.* (U.S. Patent No. 5,452,416) discloses an automated system for organizing and manipulating medical images containing non-inherently unrelated image aspects. The Examiner has suggested that the reference teaches the ability to drop and drag annotations from a list (drawing Applicant's attention to column 17, lines 14-48).

Applicant respectfully submits that the disclosed drop and drag annotation of Hilton *et al.* differs in multiple fundamental respects from that of Applicant's invention.

3. As repeatedly stressed in the Kuchinsky *et al.* reference, manual text entry of annotations is a laborious process (page 498, right column, fourth paragraph).

First, Hilton *et al.* stress the limited nature of the lists (i.e., that their content be determined by the nature of the anatomical structure being reviewed). Hilton *et al.* provides no capacity for a user to alter or expand the provided list. In contrast, the list provided in Applicant's invention is user-determined and freely amended.

Applicant moreover submits that the annotations provided by Hilton *et al.* are not searchable. Thus, while the images of multiple patients may all contain a particular annotation, the method of Hilton *et al.* provides no means for retrieving such images. Such a system may possess utility for medical images in which patient names serve as the primary retrieval aspects, but completely fails the goals of the present invention. It is accordingly submitted that Hilton *et al.* fails to anticipate the present invention or render it obvious.

**D. The Combined Teachings Of "Applicant Admitted Prior Art,"
Kuchinsky *Et Al.* And Hilton *et al.* Fail To Render The Present
Invention Obvious**

As indicated above, the Background Art differs from Applicant's invention in lacking the capability to employ drop and drag positioning to implement desired annotations, especially from a user-editable list of potential annotations; lacking the ability to store previously employed annotation terms; lacking an effective ability to search combinations of annotated sub-images; and lacking an effective ability to annotate the image aspects of an electronic image.

Applicant respectfully submits that such deficiencies are not remedied by the cited Kuchinsky *et al.* and/or Hilton *et al.* references. Kuchinsky *et al.* fails to teach or suggest the annotation of individual image aspects, or the display of such annotations. It fails to teach a drop and drag list of annotation terms that may be employed to search for and retrieve desired images. The reference fails to teach how images may be searched for multiple search constraints. These deficiencies are not remedied by the cited Hilton *et al.* reference. Although Hilton *et al.* teaches a drop and drag list format, it does not teach (and indeed teaches away from) an editable list whose members may be arbitrarily selected by

the user. Nor does Hilton *et al.* teach the capability of using the provided drop and drag list as search terms to facilitate the retrieval of desired images. In sum, the cited secondary references fail to remedy the deficiencies of the primary references.

Accordingly, Applicant respectfully submits that the rejection of claims 1-6, 10-15, 19-24 and 28-36 pursuant to 35 U.S.C. § 103(a) in light of "Applicant Admitted Prior Art" ("AAPA") and Hilton *et al.* (U.S. Patent No. 5,452,416), and of claims 7-9, 16-18 and 25-27 pursuant to 35 U.S.C. § 103(a) as unpatentable in light of "Applicant Admitted Prior Art" ("AAPA") when combined with Hilton *et al.* (U.S. Patent No. 5,452,416) and Kuchinsky *et al.* may be properly withdrawn.

III. The Patentability of the Presented Claims over the Teachings of Barber *et al.*, Wayne *et al.* and Kuchinsky *et al.*

The previously presented claims of the present application have been rejected as obvious in light of Barber *et al.*, Wayne *et al.* and Kuchinsky *et al.* In the interest of completeness, Applicant respectfully submits that the presently amended claims define patentable subject matter over these references.

A. The Teachings of Barber *et al.*

Applicant respectfully submits that Barber *et al.* teaches a method of querying an image database for images associated with a textual or other tag (e.g., shape, color, etc.). Importantly, however, Barber *et al.*'s images must be *pre*-annotated in order for use, and the disclosed method involves *non*-textual "visual annotation" searching (i.e., one searches for a desired image by building a visual query based on image content or characteristic (e.g., color, texture, shape, etc.; column 2, lines 63-67; column 3, lines 8-22), which may accomplished alone, or with further assistance using textual tags (column 3, lines 60-64). The reference expressly teaches away from the use of textual annotations as a sole or primary means for searching electronic images (column 1, lines 30-37).

While Barber *et al.* does teach associating textual tags with images, it is respectfully submitted that it does so in the context of forming the electronic image library. The reference provides no teaching or means that would have permitted those of ordinary skill to add, subtract, or vary the preset annotations of the electronic images of the image library being queried. Due to this deficiency in Barber *et al.*, a user may well query and find a "bell tower" (see, e.g., Barber *et al.* Figure 2) by creatively defining the database query, but could not find "building with four windows" unless that identifier was associated with the image by the compiler of the database. More importantly, once an image having a "building with four windows" is found, the user would be unable to associate an identifying annotation to the image for the benefit of subsequent users. This distinction between the teachings of Barber *et al.* and the present invention is embodied in the recitations of all claims that a user may add new "user-selected" annotation terms to the database list and may associate such terms with image aspects of the electronic images. In contrast, Barber *et al.* merely teaches the querying of image aspects with "user-selected" annotation terms and only as an adjunct to "visual queries."

Applicant submits that these distinctions are substantial, since they prevent Barber *et al.* from addressing the desire of subsequent database users to be able to modify the annotations associated with a given image aspect, and to retrieve images based on their own user-selected annotations.

As the Examiner has noted, the present invention additionally differs from that of Barber *et al.* in a further fundamental respect: the ability of the present invention to position annotations within the displayed electronic image so as to permit a user to identify the associated image aspect and distinguish it from non-target image aspect(s) contained within the electronic image. Rather, Barber *et al.*'s annotations are placed outside of the image (see, e.g., Figure 6), and it remains for the user to guess which image aspect is being referenced by a particular annotation. In contrast, the present invention provides positional guidance to those seeking to identify a target image aspect.

It is accordingly submitted that Barber *et al.* fail to anticipate the present invention or render it obvious.

B. The Teachings of Whayne *et al.*

The Whayne *et al.* Patent is concerned with providing an interface for performing a diagnostic or therapeutic procedure on heart tissue. The Examiner has pointed to Figure 19, and to column 24, lines 20-23 and 38-48, as evidencing the use of annotations positioned within an image. It is respectfully submitted, however, that the annotations permitted by Whayne *et al.* are not searchable, nor do they permit the retrieval of electronic images containing associated image aspects. Hence, the reference completely fails to address the abilities of the presently claimed invention to use annotation terms as a means for retrieving those images of an image database that possess image aspects associated with a queried annotation term.

It is accordingly submitted that Whayne *et al.* fails to anticipate the present invention or render it obvious.

C. The Teachings of Kuchinsky *et al.*

The teachings of Kuchinsky *et al.* have been discussed above. It is respectfully submitted that Kuchinsky *et al.* fails to anticipate the present invention or render it obvious.

D. The Non-Obviousness of the Presented Claims in Light of the Combined Teachings of Barber *et al.*, Whayne *et al.* and Kuchinsky *et al.*

Applicant respectfully submits that the combined teachings of Barber *et al.*, Whayne *et al.* and Kuchinsky *et al.* do not detract from the patentability of the presently claimed invention.

As discussed above, Barber *et al.* fails to teach or suggest:

- (1) a computer interface in which non-annotated image aspects may be annotated, or in which the annotation of an image may be added, subtracted, or altered at the desire of a *subsequent* user so as to facilitate the retrieval of a desired image using user-selected annotation terms;
- (2) the ability to position an annotation within the displayed electronic image so as to permit a user to identify the associated image aspect and distinguish it from non-target image aspect(s) contained within the electronic image; and
- (3) a searchable list of annotation terms.

Additionally, Barber *et al.* affirmatively teaches away from reliance on non-visual search queries.

It is submitted that Whayne *et al.* and Kuchinsky *et al.* fail to remedy these deficiencies. While Whayne *et al.* teaches the ability to position an annotation within an image, the annotation is not searchable, and thus Whayne *et al.*'s teachings are not applicable to the present invention. Even if it would have been obvious to have employed Whayne *et al.*' "in image" annotation to Barber *et al.*'s method, the resultant method would still fail to provide subsequent users with a searchable list of annotation terms, or the capacity to add or edit those terms, or the ability to identify target image aspects using such terms.

While Kuchinsky *et al.* teaches the annotation of photographic images, it fails to disclose the annotation of target image aspects, and thus fails to remedy the deficiencies of the combined teachings of Barber *et al.* and Whayne *et al.* Accordingly, it is respectfully submitted that the present claims are patentable over the cited prior art.

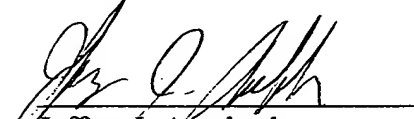
IV. Concluding Remarks

Having now fully responded to all of the Rejections made by the Examiner, Applicant respectfully submits that all of the pending claims are now in condition for Allowance, and earnestly solicit early notice of such favorable action. The Examiner is

respectfully invited to contact the undersigned with respect to any issues regarding this application.

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Respectfully Submitted,


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